

ENGINEERS FORUM ON SUSTAINABILITY

Forum Addresses Wide Range of Sustainability Developments and Issues

At the November 12, 2004 meeting of the Engineers Forum on Sustainability, participants were briefed on the vision for the International Polar Year 2007 – 2008, the Project Sustainability Management Guidelines published by the International Federation of Consulting Engineers (FIDIC), the university sustainability initiatives in South Carolina, and the mission and activities of the Green Blue Institute. Engineering involvement in the current cycle of the United Nations Commission on Sustainable Development (focusing on water, sanitation, and human settlements) was also discussed.

This issue of the Forum Newsletter summarizes these presentations, and also includes a wide range of interesting articles related to sustainability in government, academia, international, professional, and other categories. I invite your comments and suggestions on the Forum Newsletter and its contents.

As a reminder, you can find the Index of Newsletter Articles and the Forum Newsletters beginning with December 2001 at the ASCE website: www.asce.org/professional/sustainability, and the earlier newsletters at the ASEE website: www.asee.org/resources/organizations/efsnewsletter.cfm.

The next meeting of the Forum is scheduled for Friday, March 11, 2005, at the National Academy of Engineering in Washington, DC. The Forum will meet from 9:00 am to noon, and the AAES International Activities Committee/Engineers International Roundtable will meet in the same room from 1:00 pm to 4:00 pm. Detailed agendas will be mailed to you prior to the meetings.

Best wishes for a happy and sustainable New Year! - Al Grant, Forum Chair (aagrant@localnet.com)

Inside This Issue

GOVERNMENT		ASCE Addresses Ethical Professional Practices Worldwide	6
DC Promotes Clean Energy and Faith-Based Conservation	2	AICHE Institute for Sustainability Conclave	7
ACADEMIA		IEEE Pulse Survey on Sustainable Development	7
South Carolina Sustainable Universities Initiative	2	ASME Update on Sustainability	8
INTERNATIONAL		OTHER ORGANIZATIONS AND DEVELOPMENTS	
International Polar Year 2007 – 2008	3	GreenBlue Focuses on Sustainable Packaging and Cleaning Products	9
UNCSD Focuses on Water, Sanitation, and Human Settlements	4	LEAD International Promotes Capacity Development	10
Millennium Ecosystem Assessment Progresses	4	Upcoming Sustainability Events	10
PROFESSIONAL ORGANIZATIONS			
FIDIC Report on Project Sustainability Management	5		
RNRF Congress on Building Capacity for Coastal Solutions	6		

GOVERNMENT

DC Promotes Clean Energy and Faith-Based Conservation

In December 2004, the District of Columbia Council passed a landmark clean energy bill. The Renewable Portfolio Standard Bill requires that energy providers in the District get at least 11 percent of their electricity from clean, renewable resources by the year 2022. It has a specific requirement for solar energy as well, which will create about 30 megawatts of solar capacity. The bill's passage follows enactment of a Renewable Portfolio Standard in Maryland and Pennsylvania.

In addition, more than 20 individuals representing over 600 congregations across the Washington metropolitan area came together to write the "Green Faith Guide: Working Together to Protect and Restore Our Environment." They are members of Jewish, Muslim, Catholic, Protestant, Bahai, Unitarian, and other religious institutions. The Guide highlights specific steps congregations can take to reduce their impact on the environment and to help others join in the spirit of environmental stewardship.

The Green Faith Guide was published by the DC Energy Office as part of its Comprehensive Energy Plan. The Green Checklist in the Guide includes the following:

NO OR LOW COST ACTIVITIES

- Incorporate ecology into your religious school curriculum, speeches and holiday celebrations.
- Evaluate the cleaning products and pesticides used for maintaining your buildings and grounds.

- Replace toxic substances with environmentally friendly products.
- Set up an energy audit.
- Recycle paper, plastic, cardboard, aluminum, glass and purchase recycled-content paper.
- Set up a compost pile on the premises for composting leaves and trimmings from your grounds and food waste from your kitchen.
- Turn off computers when not in use for significant periods.

SHORT TERM COST, LONG TERM SAVINGS

- Encourage use of reusable ware instead of polystyrene, plastic, and paper cups, plates and utensils.
- Implement energy conservation measures, such as installing compact fluorescent lighting and occupancy sensors.
- Investigate use of alternative energy measures (solar or wind), or purchase green electricity from renewable sources.
- Install water conservation measures.

CONSERVATION MEASURES THAT CAN MAKE MONEY

- Organize spring and fall "drop and swaps" or garage sales to recycle used goods.
- Sell environmentally minded items, such as greeting cards made from recycled paper.

For more information, contact the DC Energy Office at 202-673-6572, www.dcenergy.gov/.

ACADEMIA

South Carolina Sustainable Universities Initiative

At the November 2004 Forum meeting, Dr. Alan Alzerman, Director, School of the Environment, Clemson University, provided a briefing on the South Carolina Sustainable Universities Initiative (SUI). The Initiative is a statewide network of faculty, staff, and students who share an interest in integrating environmental considerations into their work. While all of the SUI schools collaborate and share information, each individual school focuses on the aspects of sustainability that best fit the institution.

Clemson University, the Medical University of South Carolina, and the University of South Carolina (USC), developed the SUI. In 1998, the presidents of the three schools signed a pledge to cooperate in leading the way toward a more sustainable future through teaching, research, community service, and facilities management. In 2000, the state's General Assembly appropriated one-time funds to expand the program to other state-supported institutions of higher learning. To date, 13 four-year and technical schools have joined.

The Initiative was sparked by a private foundation with business interests in South Carolina and abroad that felt education was the best place to foster change. The foundation suggested that the three universities begin by working together.

The primary focus of the Initiative is to help students understand how to meet fundamental human needs without destroying the planet's ability to support its human population. This is done by working with faculty to expand their teaching and research portfolios and by working with administrators and operations managers to ensure that institutions are practicing what faculty preaches. SUI serves as a catalyst for activities that will make the state's three research universities, other educational institutions, and ultimately, the state as a whole, more sustainable. A key goal is to make campus operations models of good practice, serving as examples for students to emulate when they move into positions of authority.

Some examples of campus sustainability actions and activities include:

- Clemson's President has announced that all new buildings will be constructed to LEED silver standards.
- Clemson and USC have environmental committees, and both schools have done environmental assessments and are developing new protocols for annual review.
- Several schools are monitoring water quality at campus ponds.
- Both Clemson and USC have had successful "move-out" collections at the end of the school year, donating many tons of usable material to local charities.
- USC's Environmental Health & Safety department had its first academic Environmental Management System certified under ISO 14001 standards.

For more information, visit the SUI website at www.sc.edu/sustainableu.

INTERNATIONAL

International Polar Year 2007 - 2008

At the November 12, 2004 Forum meeting, Chris Elfring, Director, Polar Research, National Academies, described the vision for the International Polar Year 2007 – 2008 (IPY). Environmental changes currently witnessed in the polar regions are in many cases more pronounced than changes observed in the mid-latitudes or tropics. The Arctic Sea ice cover is decreasing; some ice shelves in Antarctica are retreating and thinning; glaciers are shrinking; and ecosystems are changing, for instance, with plants flowering at earlier times. These changes are having human impacts: some Alaska villages have been moved to higher ground in response to rising sea levels, and thawing of permafrost is undermining roads and buildings in northern communities around the world.

The polar regions, while physically distant, are critical links in the global climate system. The polar oceans play a critical role in maintaining ocean currents that keep coastal Europe much warmer than it would be otherwise, and the sea ice cover modifies Earth's surface temperature by reflecting solar energy. The polar regions also hold unique information of Earth's past climate history, and they are growing in economic and geopolitical importance.

The U.S. Committee for the International Polar Year 2007 - 2008 was formed by the Polar Research Board of the National Academies to articulate a vision for U.S. participation in IPY in coordination with and on behalf of our nation's scientific communities. Five broad scientific challenges provide a framework for organizing the IPY activities:

- Assessing large-scale environmental change in the polar regions, with questions looking at both the physical and human dimensions of change and its impacts.
- Conducting scientific exploration of "new" frontiers, whether these are once accessible places such as the seafloor, or areas of inquiry that are now open because of advances in technology, such as how the tools of genomics now allow exploration of previously unanswerable questions about biological adaptation.
- Observing the polar regions in depth, with adequate coverage of the vast and challenging landscape, to provide a description of current conditions and allow for better future understanding of variability and change.

- Understanding the human-environmental dynamics in a region where the connections are intimate and where the impacts of change are clear.
- Creating new connections between science and the public, using these regions that are inherently intriguing.

For more information, contact the Polar Research Board at 202-334-3479. Copies of the Report, “A Vision for International Polar Year 2007 – 2008” are available from National Academies Press www.nap.edu.

UNCSD Focuses on Water, Sanitation, and Human Settlements

At its eleventh session, held in New York from April 28-May 9, 2003, the United Nations Commission on Sustainable Development (CSD) decided that its multi-year programme of work following the 2002 World Summit on Sustainable Development would be organized on the basis of two-year “Implementation Cycles” comprised of a “Review Year” and a “Policy Year.”

In each two-year cycle, a thematic cluster of issues will be addressed in an integrated manner, taking into account economic, social, and environmental dimensions of sustainable development. The Commission agreed that the implementation process shall cover all issues equally, and noted that the selection of some issues for a given cycle did not diminish the importance of the commitments undertaken with respect to the issues to be considered in future cycles. In every cycle, a number of cross-cutting issues will also be addressed.

During the first two-year cycle (CSD-12 in 2004 and CSD-13 in 2005), the Commission decided to focus on issues related to water, sanitation, and human settlements. The cross-cutting issues include poverty eradication, changing unsustainable patterns of consumption and production, protecting and managing the natural resource base of economic and social development, sustainable development in a globalizing world, sustainable development of SIDS, sustainable development for Africa, other regional initiatives, means of implementation, institutional framework for sustainable development, gender equality, and education.

CSD-12 concluded that much better harnessing of science and technology will be an indispensable condition for meeting the Millennium Development Goals and implementing the recommendations in the Johannesburg Plan of Implementation related to water, sanitation, and human settlements. Investments in science and technology continue to be inadequate, especially in developing countries where funding for research and development is often less than 0.5 percent of annual GDP.

Based on the CSD-12 results, the Scientific and Technological Community, covering all science and technology domains, has recommended the following:

- Strengthening capacity to monitor freshwater and to develop integrated indicator sets.
- Building enhanced national and regional S&T capacity, with particular attention to developing countries.
- Improving scientific knowledge and knowledge sharing.
- Making scientists, engineers, educators, and decisionmakers better partners in addressing sustainable development issues related to water, sanitation, and human settlements.

All of the issues related to these recommendations have been extensively addressed by the Scientific and Technological Community in the CSD-12 Dialogue Paper entitled, “Harnessing Science and Technology for Sustainable Development: Water, Sanitation and Human Settlements” (UN document E/CN.17/2004/10.Add.3).

Millennium Ecosystem Assessment Progresses

The Millennium Ecosystem Assessment (MA) is an international work program designed to meet the needs of decisionmakers and the public for scientific information concerning the consequences of ecosystem change for human well-being and options for responding to those

changes. The MA was launched by the U.N. Secretary-General Kofi Annan in June 2001 and it will help to meet assessment needs of the Convention on Biological Diversity, Convention to Combat Desertification, the Ramsar Convention on Wetlands, and the Convention on

Migratory Species, as well as needs of other users in the private sector and civil society.

The MA focuses on ecosystem services (the benefits people obtain from ecosystems), how changes in ecosystem services have affected human well-being, how ecosystem changes may affect people in future decades, and response options that might be adopted at local, national, and global scales to improve ecosystem management and thereby contribute to human well-being and poverty alleviation.

The MA is governed by a Board comprised of representatives of international conventions, UN agencies, scientific organizations and leaders from the private sector, civil society, and indigenous organizations. A 13-member Assessment Panel of leading social and natural scientists oversees the technical work of the assessment, supported by a secretariat with offices in Europe, North America, Asia, and Africa, and coordinated by the United Nations Environment Programme. More than 500 authors are involved in four expert working groups preparing the global assessment and hundreds more are undertaking more than a dozen sub-global assessments.

The approach and methods used in the MA is described in the report "Ecosystems and Human

Well-Being: A Framework for Assessment," published by Island Press in September 2003. The technical assessment reports produced by each of the four MA working groups have entered the peer review stage and will be published in early 2005. Five synthesis reports distilling the MA findings will be produced for specific audiences. Each of the MA sub-global assessments will produce additional reports to meet the needs of their own audiences. All printed materials will be complemented by the information and data rich website, capacity-building activities, and briefings and workshops designed to help communicate the findings, tools, and methods to users at multiple scales.

The four-year old MA budget is approximately \$17 million, with more than \$7 million of additional support through in-kind contributions. Major financial support for the MA is being provided by the Global Environment Facility, the United Nations Foundation, the David and Lucile Packard Foundation, The World Bank, the United Nations Environment Programme, the Government of Norway, and the Kingdom of Saudi Arabia.

For more information, visit the MA website at www.millenniumassessment.org.

PROFESSIONAL ORGANIZATIONS

FIDIC Report on Project Sustainability Management

Bill Wallace, Chair of the Sustainable Development Task Force, International Federation of Consulting Engineers (FIDIC), summarized the Federation's Project Sustainability Management Guidelines Report at the November 12, 2004 Forum meeting.

Many owners of projects aim to commit to the principles of sustainable development by building or refurbishing facilities and infrastructure that make more efficient use of resources, protect ecological systems, and account for community needs. However, they need to know if their designs and project delivery make a genuine contribution to sustainable development. Goals for sustainable development tend to focus on broad problems and issues facing all of society, such as global warming, biodiversity, access to fresh water, and materials and energy use. While this whole-society focus is absolutely essential, it makes it difficult for project owners to clearly define and specify the requirements for sustainable development.

FIDIC's Project Sustainability Management Guidelines address this fundamental issue. In the Project Sustainability Management (PSM) process, the project owner and the consulting engineer balance the owner's project vision against cost and available alternatives by working together to select appropriate project goals and indicators for sustainable development which are linked back to higher level goals. Objectives for sustainable development are therefore addressed in much the same way as other project objectives are addressed in the project's quality management plan.

PSM enables project owners and consulting engineers to devise and customize indicators to meet stakeholder concerns and issues, while demonstrating a rigorous, causal link to the fundamental concerns and

goals of sustainable development. The approach can be used by firms to demonstrate both their clients' commitment and their own commitment to meeting sustainability objectives. PSM also provides a methodology for benchmarking sustainable development project performance, and for ensuring that advances in one dimension of sustainable development are not accomplished at the expense of another.

The report includes a case study on sustainable school construction in Colorado, which clearly illustrates the first three stages of PSM practice, where project specific goals and indicators for sustainable development are established, adjusted, and tested.

For more information, contact William A. Wallace: Wallace Futures Group, LLC, 1400 Overlook Drive, Steamboat Springs, CO 80487, Tel. 970-879-1122, E-mail billwallace@wallacefutures.com.

RNRF Congress on Building Capacity for Coastal Solutions

The Renewable Natural Resources Foundation (RNRF) conducted the "Congress on Building Capacity for Coastal Solutions," December 6-7, 2004, at the American Geophysical Union headquarters in Washington, DC. The Congress focused on 1) understanding and reconciling the complexities of coastal governance and communication among federal, state, and local entities; 2) expanding and improving scientific capacity and the utilization of information technologies to sustain coastal resources; and 3) identifying opportunities and necessary tools to empower communities (including those far inland) to engage in discussions and actions for coastal solutions.

Timothy Hennessey, Professor, Department of Political Science, University of Rhode Island, addressed "Complexities of Coastal Governance." He noted that more than half of the existing cabinet-level departments, plus several existing agencies, play important roles in the development of ocean and coastal policy. Many individual programs within these departments and agencies administer specific initiatives that address varying, and sometimes overlapping, ocean and coastal issues.

Margaret Davidson, Director, NOAA Coastal Services Center, spoke about "Building Networks for Solutions: Information Technology and Science." She discussed current barriers to effective utilization of information technology (including data sharing, integration, and communication), and opportunities for overcoming them.

The Gulf of Maine was presented as a case study. The Gulf of Maine is a highly dynamic marine ecosystem that extends from Cape Sable, Nova Scotia, Canada, to Cape Cod, Massachusetts. It is characterized by a diversity of habitats, which provide refuge for a variety of organisms, from benthic dwelling worms and clams to marine mammals and sea birds. The multi-jurisdictional nature of the Gulf watershed (three states and two provinces plus numerous local governments) provides significant barriers to coastal resource management and conservation. The efforts made to overcome these barriers were discussed.

A report on the findings and recommendations of the Congress is in preparation. For more information, visit the RNRF website: www.rnrf.org.

ASCE Addresses Ethical Professional Practices Worldwide

In October 2004, the American Society of Civil Engineers (ASCE) Board of Direction adopted a Commitment Statement on Guidelines and Policies Encouraging "Zero Tolerance" for Bribery. The Statement says:

"ASCE, in cooperation with others, has begun a journey that will lead over time to the development of principles of professional conduct that will help reduce corruption in all its forms, such as fraud, bribery and other unethical and illegal practices in the engineering and construction industry. Only with openness and transparency in the procurement and delivery of engineering services can resources be efficiently allocated for their intended purpose. As a direct result, with the additional financial resources available, sustainable development and the welfare of the world's population can improve and the quality of life for people everywhere be achieved.

The American Society of Civil Engineers is joining the consulting engineering profession, the construction industry, major lenders, the legal profession, and organizations committed to the battle against worldwide

corruption. To meet this challenge, the Society pledges the development of principles and over time adoption of guidelines and policies for ethical professional practice by members of engineering societies in the U.S. and worldwide. These guidelines and policies will include zero tolerance for bribery and promote effective programs for reporting unethical behavior. The Society will consider the best practices adopted by the engineering and construction industry in developing or benchmarking anti-bribery programs.

ASCE, supported by the Task Committee on Global Principles for Professional Conduct, will provide—through its media outreach and forums of leaders, and other avenues—a global communications platform for the issue. Our work will be performed in an open and transparent manner to encourage good faith discussion and negotiations leading to principles and policies that other societies could adopt.”

AICHE Institute for Sustainability Conclave

On November 10, 2004, at the AIChE Annual Conference, Beth Beloff from BRIDGES to Sustainability (BRIDGES) and Doug Hileman from PricewaterhouseCoopers (PwC) presented the key findings from the 2004 Chemical Industry Sustainability Survey that represented a collaborative effort between BRIDGES, PwC, and the Institute for Sustainability (IfS).

The purpose of the survey was to:

- Provide specific information on current attitudes, concerns, approaches to and practices of Sustainability.
- Identify Sustainability trends for the chemical industry.
- Stimulate discussion on incorporating Sustainability into chemical industry management framework.
- To frame the discussion about sustainability practices in the book “Transforming Sustainability Strategy into Action: The Chemical Industry,” Beloff, Lines (Eds) with Tanzil, John Wiley & Sons, Inc., due to be published by early Summer 2005.

The survey was sent to individuals responsible for sustainability initiatives in companies with significant chemical operations in the U.S. Among the 35 companies that responded were:

- | | |
|-------------------------------------|-----------------------------------|
| • 3M Company (The) | • Elementis Specialties |
| • Air Products and Chemicals, Inc. | • Eliokem |
| • Arch Chemicals, Inc. | • EMD Chemicals |
| • Bayer Corporation | • Formosa Plastics Corp. |
| • BP | • Lubrizol |
| • Burlington Chemical Co. | • Methanex Corporation |
| • Cambridge Major Laboratories, Inc | • Monsanto Company |
| • Cardolite Corporation | • Occidental Chemical Corporation |
| • Celanese AG | • Pfizer |
| • Chevron Phillips Chemical Company | • PPG Industries, Inc. |
| • Dow Chemical | • Rohm & Haas |
| • DuPont | • Shell Chemical Companies |
| • Eastman Chemical Company | • W.R. Grace & Co |
| • Eastman Kodak | |

In order to gain additional perspectives on the survey results and discuss what may have been missed in the survey, two focus groups of industry participants were organized by the Center for Sustainable Technology and were facilitated by PwC and BRIDGES. The focus group participation included representatives from Air Products, BASF, BP, Cytec, Eastman Chemical, DuPont, FMC, Rohm & Haas, Shell Chemical, and the American Chemistry Council. The analysis of survey results will be published in the forthcoming book, “Transforming Sustainability Strategy into Action: The Chemical Industry.”

IEEE Pulse Survey on Sustainable Development

The IEEE regularly conducts online “pulse surveys” to help the IEEE understand member attitudes and needs. One such survey was to

ascertain attitudes regarding IEEE’s involvement in “sustainability” and “green engineering.”

There were 196 respondents who participated. A majority had some familiarity with these terms. However, only six percent said that they were strongly familiar with “green engineering” compared to twenty-five percent who were not at all. Sixteen percent said they were strongly familiar with “sustainable development” compared to twenty percent who were not. A bare majority were also aware of books and articles published by the IEEE and commercial publishers on topics related to the environment. Awareness of IEEE’s involvement in conferences and other venues related to the environment was expressed by no more than one out of three respondents. Many expressed awareness of government and industry involvement in environmental areas such as energy and recycling.

The data suggests that the engineering community is aware of the issues surrounding “sustainable development,” but that the bundling of these issues has not gained traction.

A resounding majority felt strongly that the IEEE should be more involved in areas related to sustainable development, however, with caution. Many worried about the lack of definition and hard science. For example, one respondent commented, “I believe engineers, and IEEE as an organization, must strive to be socially responsible. But I think there’s a lot of ‘pop science’ getting a lot of exposure that has little basis in fact. We need to work for a good balance.” There was support for the idea that the proper role of the IEEE is primarily “...to present clear and impartial material—not to adopt social positions for their sake...”

Some felt uncomfortable with the lumping together of social and environmental issues. “IEEE is a professional organization, not a political or lobbying organization. Neutral, but complete science and engineering information

publication is still their best, not ‘talk the trend.’” However, one respondent felt that IEEE should “...criticize, and if appropriate, take a position to criticize political decisions in any country of the world.”

The impression indicated by survey is that IEEE members are open to the idea of increasing the engagement of their professional association in issues related to the impact of technology on society and the environment. However, many question how this might be done without compromising the rigor of their profession. Even those who shy away from advocacy of specific positions or agendas indicate a willingness to explore opportunities for discourse through publications, conferences, and education. There is strong support for curricula development in higher education that address the issues embedded in sustainable development.

One respondent wrote, “Environmental issues - I’m in solid agreement. ‘Social’ issues - those need to be defined first. What, exactly, does IEEE (and, just as importantly, the IEEE membership) think ‘socially responsible engineering’ entails?” Another respondent affirmed the role of IEEE as primarily a ‘technical’ organization, stating: “The primary focus of IEEE should still be kept with developing and promoting technology, but with a secondary flavour of environmental sustainability (i.e. don’t fully change the focus of IEEE for the environment - the first thing people should associate IEEE with is technology excellence, and not the environment - environmental sustainability should be in the top 10 list though).”

In the coming year, IEEE will continue to consult its leadership and members to define what is meant by “sustainable development” and what this means for the engineering profession.

ASME Update on Sustainability

In 2005, ASME starts strongly addressing sustainability issues and promoting its practice. In February the online module, **Sustainable Engineering: Tools**, for engineering students and early career members will be available. This takes to two the number of modules focusing on sustainability offered free of charge at the Professional Practice Curriculum page, www.professionalpractice.asme.org/.

ASME’s International Mechanical Engineering Conference and Exhibition (2005 IMECE) in November will hold a **Sustainable Development Industry Track**. *Call for speakers, topics, and sessions organizers* for the following subjects: Water, Air, Waste-to-energy, Sustainable energy, Solar, Ethics for the Environment, Sustainable cities, Green buildings, Total life cycle cost, Green chemistry, Industrial ecology, Design for the environment, Recycling, Life cycle, and Teaching sustainability. The track session will count with the collaboration of ASME Solar Division and Environmental Engineering Division and AIChE’s Institute

for Sustainability. More information is available at www.asmeconferences.org/congress05/ or contact the Track Manager, Timo Marquez at marquezt@asme.org.

The Technology and Society (T&S) Division invites participation in an **on-line book review with author Ross Gelbspan** to discuss his book “Boiling Point: How Politicians, Big Oil and Coal, Journalists and Activists Are Fueling the Climate Crisis--And What We Can Do to Avert Disaster.” More book information can be found at www.heatisonline.org. Members who need professional development hours (PDH's) to maintain a P.E. license or other professional certification should check the rules of the appropriate professional body to see if participation in this seminar will qualify for PDH's. Certificates of participation will be provided. Participation will be limited to 20–25 ASME members. Respond To: Richard Ulvila, ASME Staff, ulvilar@asme.org

ASME members' continue to participate at AIChE's IfS **Sustainable Engineering Forum** and further collaboration is expected in focus group meetings and involving student chapters on the Youth Council on Sustainability. You are invited to **join our online discussion** via the Communities of Practice (CoP) by following the link: <http://cop.asme.org/COP/SustainableEngineering/>. Registration is free of charge.

More on these activities at T&S Division's Sustainable Engineering Program Committee web page www.asme.org/divisions/ts/committees/, or contact committee chair Timo Marquez marquezt@asme.org.

OTHER ORGANIZATIONS AND DEVELOPMENTS

GreenBlue Focuses on Sustainable Packaging and Cleaning Products

The Green Blue Institute (GreenBlue) was organized in 2003 to encourage and accelerate the creative, productive design of industrial activity to benefit people and the planet (See p.13, Sept. 2004 Newsletter). The mission of the GreenBlue is “To inspire a transformation in the design of human industry...based on principles found in the productive systems of nature...making commercial activity an ecological and socially regenerative force.”

A current GreenBlue project, the Sustainable Packaging Coalition, is a working group of packaging professionals, ranging along the value chain from paper and resin manufacturers to consumer product companies and retailers, whose mission is 1) to advocate and communicate a positive, robust vision for packaging; and 2) to leverage innovative, functional packaging materials and systems that support economic and environmental health. Members include BioCorp, Cargill Dow, Dow Chemical, Dupont Soy Polymers, Environmental Packaging International, Estee Lauder/Aveda, EvCo Research, Johnson & Johnson, Mead Westvaco, Nike, RSVP Packaging, Starbucks, PepsiCo, and Unilever. More information can be found at www.sustainablepackaging.org.

In September 2004, GreenBlue entered into a cooperative agreement funded by the U.S. Environmental Protection Agency (EPA) Design for the Environment Green Formulation

Initiative. The purpose of this initiative is to “Encourage the design of industrial and institutional cleaning products with favorable environmental human health profiles.” The process includes a multi-stakeholder approach, involving formulators, raw material manufacturers, industry associations, NGOs and EPA, to develop positive lists of chemical ingredients based on product functionality of cleaning products.

Cleaning product ingredient concerns include aquatic toxicity (many surfactants), endocrine disruption (some phthalates), persistence (EDTA), toxic degradation products (alkylphenol ethoxylates [APEs]), eutrophication (phosphate builders), atmospheric impacts (VOCs), and skin, eye, and respiratory irritation (ammonia, acids, and caustics). Examples of alternative chemical ingredients for use in green cleaning products include 1) polyglucoside surfactants replacing APEs, 2) hydrogen peroxide replacing harsh acids and alkali builders, 3) lactate esters replacing petroleum distillates, 4) vegetable derived surfactants replacing petroleum derived surfactants, and 5) fruit derived solvents and acids replacing unfriendly petroleum solvents and inorganic acids.

For more information, contact Laura Heine, Director of Applied Science, at 434-817-1424, or lauren.heine@greenblue.org.

LEAD International Promotes Capacity Development

Leadership for Environment and Development (LEAD) International is a global network of individuals and non-governmental organizations, committed to sustainable development. LEAD is an important not-for-profit organization, established in 1991 by the Rockefeller Foundation. The LEAD network is coordinated through an international secretariat based on the campus of Imperial College, London.

LEAD's mission is to create, strengthen, and support networks of people and institutions promoting change toward sustainable development—development that is economically sound, environmentally responsible, and socially equitable. LEAD carries out its mission through capacity development and strategic, outcome-oriented activities consisting of policy, research, action-on-the-ground, communications, and training. Capacity development includes training programs in sustainable development and leadership skills for a variety of publics. LEAD's outcome-oriented activities are designed to achieve tangible results in sustainable development. These activities are almost always undertaken with partner organizations.

LEAD has both individual and institutional members. Individual members are called LEAD Fellows. They all have completed a training program in leadership for sustainable development. The program emphasizes enhancing leadership skills, building knowledge of sustainable development challenges and exploring possible solutions, developing a set of shared ethics and values, and supporting collaboration and peer learning.

Today, there are more than 1400 LEAD Fellows from the worlds of business, media, public sector, universities, and non-governmental organizations in over 80 countries. They communicate continually, meet periodically, embark on joint projects, publish research, undertake professional exchanges, take part in international negotiations, and support each other in sustainable development. Through LEAD, they are members of an influential network of peers. LEAD Fellows today are mayors, members of parliament, heads of corporations, leaders of non-governmental organizations, ministers, newspaper editors and TV producers, scientists, and global citizens.

LEAD's institutional members include affiliated non-governmental organizations in Brazil, Canada, China, the Commonwealth of Independent States, Francophone Africa, India, Indonesia, Japan, Mexico, Nigeria, Pakistan, Southern Africa, the United Kingdom, and the U.S. These LEAD institutional members share LEAD's mission. They are well established in their countries and have expertise in capacity development, project management, research, networking support, communications, and providing policy advice.

For further information, visit www.lead.org.

Upcoming Sustainability Events

CITIZEN SCIENTIST SCIENCE WRITING COMPETITION

Citizen Science, the science and technology program of SustainUS, is pleased to announce the first-ever CITIZEN SCIENTIST science writing competition for young people (ages 13-26) in the United States. The best scientific papers written for a general audience on any topic relating to the economic, social, or environmental dimensions of sustainable development will be published in the Citizen Science online journal. Authors will receive a free magazine subscription and have an exclusive opportunity to present their respective ideas at the United Nations. Competition details are available in the application, available at www.sustainus.org/mambo/cs/csapplication.doc. For more information about SustainUS, visit www.sustainus.org.

HOUSTON AIR QUALITY, Historical Perspective on Meeting the Ozone Requirements, Lessons Learned, 1970-2004, Thursday, February 24, 2005 - 8:30 am - 5:00 pm

Rice University Shell Center for Sustainability, Shell Oil Foundation Auditorium, Jones School of Management, Rice University, Houston, Texas

Registration and map at www.ruf.rice.edu/~eesi/scs/SIP.html. Contact: Christine Gardner, 713-348-4700

SUSTAINABILITY AND GREEN ENGINEERING: COMING OF AGE

April 10-14, 2005, Atlanta, Georgia

This Topical Conference will emphasize discussions on: Sustainability: Thinking Green Through the Eyes of Your Customers, Management Review of HSE To Assure Business Sustainability, Sustainability of Business Lifecycle and Audit Practices to Assure Sustainability, Adding Benefits to Cost Assessments, Universities' Role in Sustainability, and Green Processing and Manufacturing. Be sure not to miss the Panel Discussion and Networking opportunities focused on:

- Existing approaches to defining sustainability and sustainable development, and
- Building the business cases for sustainability.

For more information, go to www.aiche.org/springapp/previewmodule/grouplist.asp?groupcode=T3&P.

ENGINEERING SUSTAINABILITY 2005

Sponsored by The Mascaro Sustainability Initiative at the University of Pittsburgh, School of Engineering, April 10-12 2005, David L. Lawrence Convention Center, Pittsburgh, Pennsylvania

The Conference aims to bring together scientists and engineers to present cutting edge results on technological advances in green construction and sustainable water use. To register go to the conference website at: www.engr.pitt.edu/msi/conference.html. Early registration ends March 11, 2005.

INTERNATIONAL CONFERENCE ON ENERGY, ENVIRONMENT AND DISASTERS (INCEED 2005)

July 24-30, 2005, Charlotte, North Carolina

Call for papers and additional information can be found at: www.iseg.giees.uncc.edu/inceed2005/.

2ND INTERNATIONAL CONFERENCE ON GREEN AND SUSTAINABLE CHEMISTRY AND THE 9TH ANNUAL GREEN CHEMISTRY AND ENGINEERING CONFERENCE

June 20-24, 2005, Washington, DC

Details on the program and logistical information will be posted on the meetings section of the GCI website at <http://chemistry.org/greenchemistryinstitute/meetings.html> as they become available.

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